

## INTERNATIONAL SEARCH REPORT

PCT/IB 03/03665

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K39/21 A61K39/42 A61K35/12 C07K16/10 C07K14/16  
 C12N15/62 C12N5/16 A61P31/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K A61P C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, MEDLINE, BIOSIS, WPI Data, EMBASE, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>LACASSE R ET AL: "Fusion-competent vaccines: Broad neutralization of primary isolates of HIV"</p> <p>SCIENCE, AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE,, US, vol. 283, no. 5400, 15 January 1999 (1999-01-15), pages 357-362, XP002120812</p> <p>ISSN: 0036-8075</p> <p>cited in the application abstract</p> <p>"Implications for HIV vaccine development" on page 361 particularly the final paragraph</p> <p style="text-align: center;">--- --/--</p>	1-66

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*Z\* document member of the same patent family

Date of the actual completion of the international search

9 December 2003

Date of mailing of the international search report

14/01/2004

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>NUNBERG JACK H: "Retraction: Fusion-competent vaccines: Broad neutralization of primary isolates of HIV. (Cited as Previews. 199900120698.)." SCIENCE (WASHINGTON D C), vol. 296, no. 5570, 10 May 2002 (2002-05-10), page 1025 XP001156542 ISSN: 0036-8075 (ISSN print) the whole document</p>	1-66
X	<p>KANG C Y ET AL: "Immunization with a soluble CD4-gp120 complex preferentially induces neutralizing anti-human immunodeficiency virus type 1 antibodies directed to conformation-dependent epitopes of gp120." JOURNAL OF VIROLOGY. UNITED STATES SEP 1994, vol. 68, no. 9, September 1994 (1994-09), pages 5854-5862, XPO09022627 ISSN: 0022-538X cited in the application abstract</p>	1-66
X	<p>DEVICO ANTHONY ET AL: "Immunogenic properties of HIV gp120-CD4 complexes" JOURNAL OF HUMAN VIROLOGY, vol. 5, no. 1, January 2002 (2002-01), page 71 XP009022616 2002 International Meeting of the Institute of Human Virology; Baltimore, Maryland, USA; September 09-13, 2002 ISSN: 1090-9508 abstract</p>	1-66
X	<p>FOUTS T R ET AL: "Expression and characterization of a single-chain polypeptide analogue of the human immunodeficiency virus type 1 gp120-CD4 receptor complex." JOURNAL OF VIROLOGY. UNITED STATES DEC 2000, vol. 74, no. 24, December 2000 (2000-12), pages 11427-11436, XP001156364 ISSN: 0022-538X abstract "Discussion"</p>	1-66

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## INTERNATIONAL SEARCH REPORT

PCT/IB 03/03 665

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DEVICO A ET AL: "COVALENTLY CROSSLINKED COMPLEXES OF HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1) GP120 AND CD4 RECEPTOR ELICIT A NEUTRALIZING IMMUNE RESPONSE THAT INCLUDES ANTIBODIES SELECTIVE FOR PRIMARY VIRUS ISOLATES" VIROLOGY, ACADEMIC PRESS, ORLANDO, US, vol. 218, no. 1, 1 April 1996 (1996-04-01), pages 258-263, XP000973669 ISSN: 0042-6822 abstract	1-66
X	CELADA F ET AL: "Antibody Raised Against Soluble CD4-rgp120 Complex Recognizes the CD4 Moiety and Blocks Membrane Fusion without Inhibiting CD4-gp120 Binding" JOURNAL OF EXPERIMENTAL MEDICINE, TOKYO, JP, vol. 172, October 1990 (1990-10), pages 1143-1150, XP002960399 ISSN: 0022-1007 abstract "Discussion"	1-66
X	DEVICO A L ET AL: "MONOCLONAL ANTIBODIES RAISED AGAINST COVALENTLY CROSSLINKED COMPLEXES OF HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 GP120 AND CD4 RECEPTOR IDENTIFY A NOVEL COMPLEX-DEPENDENT EPITOPE ON GP120" VIROLOGY, ACADEMIC PRESS, ORLANDO, US, vol. 211, no. 2, 20 August 1995 (1995-08-20), pages 583-588, XP000578383 ISSN: 0042-6822 cited in the application abstract	1-66
X,P	MARTIN LOIĆ ET AL: "Rational design of a CD4 mimic that inhibits HIV-1 entry and exposes cryptic neutralization epitopes." NATURE BIOTECHNOLOGY. UNITED STATES JAN 2003, vol. 21, no. 1, January 2003 (2003-01), pages 71-76, XP001156366 ISSN: 1087-0156 page 71, column 1, line 20 -column 2, line 19 "Discussion"	1-66

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	PAUL N L ET AL: "Expression of HIV-1 envelope glycoproteins by Semliki Forest virus vectors." AIDS RESEARCH AND HUMAN RETROVIRUSES. UNITED STATES OCT 1993, vol. 9, no. 10, October 1993 (1993-10), pages 963-970, XP009022614 ISSN: 0889-2229 the whole document	1-66
A	SCHUBERT M ET AL: "INSERTION OF THE HUMAN IMMUNODEFICIENCY VIRUS CD4 RECEPTOR INTO THE ENVELOPE OF VESICULAR STOMATIS VIRUS PARTICLES" JOURNAL OF VIROLOGY, NEW YORK, US, US, vol. 66, no. 3, 1 March 1992 (1992-03-01), pages 1579-1589, XP000644669 ISSN: 0022-538X the whole document	1-66